(54) LIGHT EMITTING SPECTRUM ANALYSIS METHOD
(11) 1-270647 (A) (43) 27.10.1989 (19) JP
(21) Appl. No. 63-101002 (22) 22.4.1988
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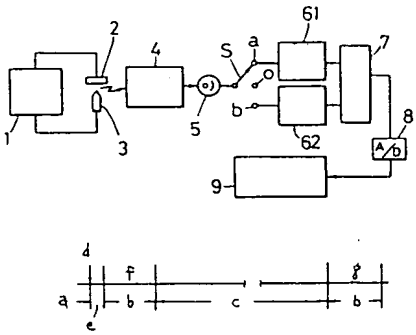
(51) Int. Cl⁴. G01N21/67

PURPOSE: To quantitatively analize the impurity elements in a metal by a form within a short time, respectively integrating the emission quantity of the bright line of an element to be quantified at the initial and latter periods for a definite period and forming a calibration curve between the integrated quantity of light of the latter period and the total concn. of the element to be quantified.

CONSTITUTION: Discharge 1 is performed between a sample 2 to be measured and an opposed electrode and the bright line of an element to be quantified is detected by a photodetector 5 through a spectroscope 4. A switch S is changed over to a contact (a) for 4sec 1sec after the start of discharge and the quantity of light is integrated by an integration circuit 61 while integrated output P1 is taken in a data processor 9. Further, after 20sec, the switch S is changed over to a contact (b) for 4sec and light detection output is integrated by an integrating circuit 62 and the output P2 is taken in the processor 9. The data of a calibration curve due to the output P2 preliminarily calculated with respect to a standard specimen is stored in the processor 9. The processor 9 substitutes the calculated outputs P2, P1 for the formula of the calibration curve to calculate the total concn. I2 and concn. I1 of an objective element. Subsequently, non-uniform. concn. Ii and uniform concn. Is are calculated by $Ii = I1 - I2$ and $Is = I2 - Ii$.

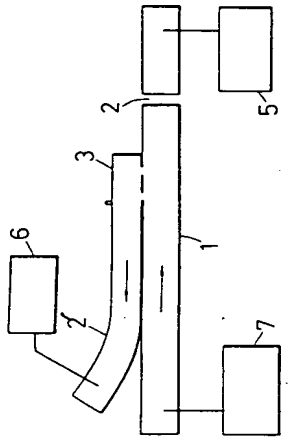


1: power supply apparatus, 7: multiplexer, a: one sec, b: 4sec, c: 20sec, d: discharge start, e: preparatory discharge, f: integration by 61, g: integration by 62

(54) APPARATUS FOR MEASURING ELECTRICAL CHARACTERISTICS OF MATERIAL
(11) 1-270648 (A) (43) 27.10.1989 (19) JP
(21) Appl. No. 63-100999 (22) 22.4.1988
(71) KANZAKI PAPER MFG CO LTD (72) SHIGEYOSHI OSAKI
(51) Int. Cl⁴. G01N22/00,G01R27/02

PURPOSE: To simply measure the conductivity of a conductive material, by inputting a microwave to a microwave-guide from one end thereof and inserting a specimen in the waveguide so as to cross the same to measure the transmissivity or reflectivity of the microwave.

CONSTITUTION: A microwave input means 7 is provided to the left end of a waveguide 1 and a slit (pref. as small as possible in its slit width) 2 crossing the waveguide 1 is provided on the way of the waveguide 1 and a sub-waveguide 2′ is connected to the waveguide 1 on the left side of the slit 2 through a directional coupler 3 and detection means 5, 6 are provided to the terminal parts of the waveguides 1, 2′. When a conductive sheet containing a carbon fiber is inserted in the slit 2, the microwave is transmitted and reflected (absorbed) by the specimen and the output of the detection means 5 is lowered and output appears in the detection means 6. Since transmissivity and reflectivity are changed by the conductivity of the specimen, by separately performing calibration, conductivity can be performed. In the case of mere comparative measurement, the conductivity of the specimen can be compared by preparing a standard specimen.



(54) OUTER PERIPHERAL WORK APPARATUS FOR PIPING
(11) 1-270649 (A) (43) 27.10.1989 (19) JP
(21) Appl. No. 63-99589 (22) 22.4.1988
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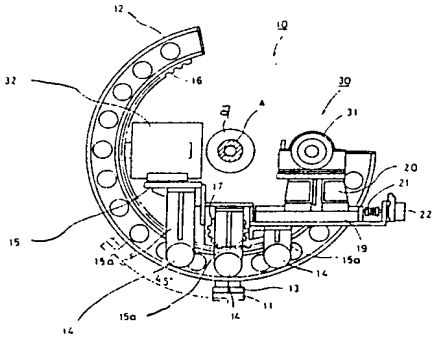
(51) Int. Cl⁴. G01N23/04,G01B15/00,G01N29/04

PURPOSE: To simplify the work on piping and to shorten a working time, by mounting an X-ray CT apparatus to a revolving stand revolving along the circular arc guide rail provided with an opening part mounted to a working manipulator.

CONSTITUTION: A guide rail 12 is mounted on the connection stand 13 connected to a working manipulator 11 and formed by processing I-steel into a circular arc shape. Guide rollers 14 are provided to the rail 12 and mounted through the support posts 15a integrated with a revolving stand 15. The stand 15 is driven so as to be revolved by rotating the pinion 17 meshing with the rack 16 provided to the inner periphery of the rail 12 by the air pulse motor mounted to the post 15a at the central part. An X-ray CT apparatus 30 is mounted on the stand 15 so as to grasp the center of piping A. The apparatus 30 receives the output of an X-ray generator 31 through the piping A by a line sensor 32 to output the position data of the rail 12 to the piping A and moves the manipulator 11 on the basis of the said data to position the same. Thereafter, the output signal of the sensor 32 is sent to an analytical part to inspect the thickness reduction of the piping A.



10: piping outer periphery work apparatus, 17: pinion, 19: slide rail, 20: slide stand, 21: feed screw, 22: sliding air pulse motor, a: coating